WHAT IS CLAIMED IS:

1.   In an OFDM (Orthogonal Frequency Division Multiplexing) system where the same information bit stream is masked with a plurality of different mask sequences and a masked information bit sequence having the lowest PAPR (Peak to Average Power Ratio) is selected for transmission among a plurality of masked information bit sequences, a method of generating the selected masked information bit sequence for transmission to a receiver, the method comprising the steps of:

generating an information sequence by adding CRC (Cyclic Redundancy Code) bits to an information bit stream, the CRC bits being used for error check;

generating a plurality of masked information sequences by masking the information sequence with a plurality of different mask sequences;

generating IFFT (Inverse Fast Fourier Transform) sequences by inverse-fast-Fourier-transforming the masked information sequences; and

selecting an IFFT sequence having the lowest PAPR among the IFFT sequences.

2.   The method of claim 1, after the step of generating the masked information sequences, further comprising the steps of:

channel-encoding each of the masked information sequences; and

symbol-mapping each of the masked information sequences.

3.   The method of claim 2, wherein the masked information sequences are generated by exclusive-OR operating the information sequence with the mask sequences.

4.   The method of claim 1, after the step of generating the information sequence, further comprising the steps of:

channel-encoding the information sequence; and

symbol-mapping the encoded information sequence.

5.   The method of claim 4, wherein the masked information sequences

are generated by multiplying the mapped information sequence with the mask sequences on a bit basis.

6. The method of claim 1, wherein the IFFT sequence selecting step comprises the steps of:

calculating the PAPRs of the IFFT sequences; and

selecting the IFFT sequence having the lowest of the PAPRs.

7. In an OFDM (Orthogonal Frequency Division Multiplexing) system where the same information bit stream is masked with a plurality of different mask sequences and a masked information bit sequence having the lowest PAPR (Peak to Average Power Ratio) is selected for transmission among a plurality of masked information bit sequences, an apparatus for generating the selected masked information bit sequence for transmission to a receiver, the apparatus comprising:

a CRC (Cyclic Redundancy Code) generator for generating an information sequence by adding CRC bits to an information bit stream, the CRC bits being used for error check;

a plurality of maskers for generating a plurality of masked information sequences by masking the information sequence with a plurality of different mask sequences;

an IFFT (Inverse Fast Fourier Transformer) for generating IFFT sequences by inverse-fast-Fourier-transforming the masked information sequences; and

a selector for selecting an IFFT sequence having the lowest PAPR among the IFFT sequences.

8. The apparatus of claim 7, further comprising:

a channel encoder for encoding each of the masked information sequences; and

a symbol mapper for mapping each of the masked information sequences.

9. The apparatus of claim 8, wherein the masking operators are exclusive-OR gates for exclusive-OR operating the information sequence with the mask sequences.

10. The apparatus of claim 7, further comprising:

a channel encoder for encoding the information sequence; and

a symbol mapper for mapping the encoded information sequence.

11. The apparatus of claim 10, wherein the masking operators are multipliers for multiplying the mapped information sequence with the mask sequences on a bit basis.

12. The apparatus of claim 7, further comprising a mask generator for generating the mask sequences.

13. The apparatus of claim 7, wherein the selector comprises:

a PAPR calculator for calculating the PAPRs of the IFFT sequences; and

a comparison and selection unit for comparing the PAPRs and selecting the IFFT sequence having the lowest of the PAPRs.

14. In an OFDM (Orthogonal Frequency Division Multiplexing) system where the same information bit stream is masked with a plurality of different mask sequences and a masked information bit sequence having the lowest PAPR (Peak to Average Power Ratio) is selected for transmission among a plurality of masked information bit sequences, a method of determining the selected masked information bit sequence received from a transmitter, the method comprising the steps of:

generating an FFT (Fast Fourier Transform) sequence by fast-Fourier-transforming a received masked information sequence;

masking the FFT sequence with a plurality of different mask sequences used by a transmitter;

checking errors using CRC (Cyclic Redundancy Code) bits of each of the masked information sequences; and

detecting a mask sequence selected by the transmitter according to the CRC check results.

15.   The method of claim 14, after the FFT sequence generating step, further comprising the steps of:

symbol-demapping the FFT sequence; and

channel-decoding the demapped information sequence.

5

16.   The method of claim 15, wherein the FFT sequence is masked by exclusive-OR operating the FFT sequence with the mask sequences.

17.   The method of claim 14, after the masking step, further comprising 10 the steps of:

symbol-demapping the masked information sequences; and

channel-decoding the demapped information sequences.

18.   The method of claim 17, wherein the FFT sequence is masked by 15 multiplying the FFT sequence by the mask sequences.

19.   The method of claim 14, wherein a mask sequence determined to be error-free at the CRC check is selected in the mask sequence selecting step.

20   20.   In an OFDM (Orthogonal Frequency Division Multiplexing) system where the same information bit stream is masked with a plurality of different mask sequences and a masked information bit sequence having the lowest PAPR (Peak to Average Power Ratio) is selected for transmission among a plurality of masked information bit sequences, a method of determining the selected masked information bit 25 sequence received from a transmitter, the method comprising the steps of:

generating an FFT (Fast Fourier Transform) sequence by fast-Fourier-transforming a received masked information sequence;

symbol-demapping the FFT sequence;

channel-decoding the demapped information sequence;

30   masking the decoded information sequence with a predetermined mask sequence and checking errors by CRC (Cyclic Redundancy Code) bits of the masked information sequence; and

detecting a mask sequence selected by a transmitter according to the CRC check result and generating information bits by masking the decoded information sequence with the detected mask sequence.

5   21.   The method of claim 20, wherein the mask sequence is detected by comparing the CRC check result with the CRC check results of all stored mask sequences.

22.   In an OFDM (Orthogonal Frequency Division Multiplexing) system

10   where the same information bit stream is masked with a plurality of different mask sequences and a masked information bit sequence having the lowest PAPR (Peak to Average Power Ratio) is selected for transmission among a plurality of masked information bit sequences, an apparatus for determining the selected masked information bit sequence received from a transmitter, the apparatus comprising:

15   a FFT (Fast Fourier Transformer) for generating an FFT sequence by fast-Fourier-transforming a received masked information sequence;

a masker for masking the FFT sequence with a plurality of different mask sequences used by a transmitter;

a CRC (Cyclic Redundancy Code) checker for checking errors by CRC bits of

20   each of the masked information sequences; and

a selector for detecting a mask sequence selected by the transmitter according to the CRC check results and selecting a masked information sequence corresponding to the detected mask sequence.

25   23.   The apparatus of claim 22, further comprising:

a symbol demapper for demapping the FFT sequence; and

a channel decoder for decoding the demapped information sequence.

24.   The apparatus of claim 22, further comprising an exclusive-OR gate

30   for exclusive-OR operating the FFT sequence with the mask sequences.

25.   The apparatus of claim 22, further comprising:

a symbol demapper for demapping the masked information sequences; and

a channel decoder for decoding the demapped information sequences.

26.   The apparatus of claim 25, further comprising a multiplier for

5   multiplying the FFT sequence by the mask sequences.

27.   In an OFDM (Orthogonal Frequency Division Multiplexing) system where the same information bit stream is masked with a plurality of different mask sequences and a masked information bit sequence having the lowest PAPR (Peak to

10   Average Power Ratio) is selected for transmission among a plurality of masked information bit sequences, an apparatus for determining the selected masked information bit sequence received from a transmitter, the apparatus comprising:

an FFT (Fast Fourier Transformer) for generating an FFT sequence by fast-Fourier-transforming a received masked information sequence;

15   a symbol demapper for demapping the FFT sequence;

a channel decoder for decoding the demapped information sequence;

a masker for masking the decoded information sequence with a predetermined mask sequence;

a CRC (Cyclic Redundancy Code) checker for checking errors by CRC bits of

20   the masked information sequence; and

a controller for detecting a mask sequence selected by a transmitter according to the CRC check result and generating information bits by masking the decoded information sequence with the detected mask sequence.

25   28.   The apparatus of claim 27, wherein the masker comprises:

a mask generator for generating the predetermined mask sequence; and

an adder for exclusive-OR operating the mask sequence with the decoded information sequence.

30   29.   The apparatus of claim 27, wherein the controller has the CRC check results of all mask sequences.